

Amendment to the Claims

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

1. – 32. (canceled)

33. (currently amended) A method of compensating for sample motion in the spectral analysis

~~of correlating sequential images obtained from~~ a sample, said method comprising the steps of;

~~locally~~ applying a chemical agent to a sample;

obtaining spectral data from said sample as a function of location;

obtaining a plurality of sequential images of said sample; and

aligning a subset of said plurality of images to compensate for sample motion~~processing~~

~~at least two of said sequential images to correlate said at least two sequential images.~~

34. (currently amended) The method of claim 33, wherein said ~~locally~~ applying step comprises topically applying said chemical agent to said sample.

35. (canceled)

36. (withdrawn) The method of claim 33, wherein said ~~processing~~ aligning step comprises compensating for misalignment between ~~said at least two of said sequential~~ images.

37. (withdrawn) The method of claim 33, wherein said ~~processing~~ aligning step comprises compensating for image deformations between said at least two of said sequential images.

38. (currently amended) The method of claim 33, wherein said sample motion is~~processing step~~ comprises ~~compensating for~~ a relative motion between said sample and a detection device.

39. (withdrawn) The method of claim 33, wherein said ~~processing~~ aligning step comprises aligning said at least two of said sequential images using a feature present in each of said at least two sequential images.

40. – 41. (canceled)

42. (currently amended) The method of claim ~~33,41~~ wherein, said spectral data~~optical signal~~ comprises reflectance data~~a light spectrum~~.

43. (currently amended) The method of claim ~~33,42~~, wherein said spectral data~~light spectrum~~ comprises ~~a fluorescence data~~ spectrum.

44. – 45. (canceled)

46. (previously presented) The method of claim 33, wherein said sample comprises human cervical tissue.

47. (canceled)

48. (previously presented) The method of claim 33, wherein said chemical agent interacts with said sample to alter an optical signal produced by said sample.

49. (currently amended) The method of claim 33, wherein said chemical agent is comprises at least one member selected from thea group consisting of acetic acid, formic acid, propionic acid, and butyric acid.

50. – 53. (canceled)

54. (currently amended) The method of claim 33, further comprising, determining a characteristic of an area of said sample ~~based at least in part on one or more of said at least two sequential images subsequent to correlation.~~

55. (currently amended) The method of claim 54, wherein said determining step comprises detecting an artifact ~~evaluation of at least one morphological feature of said area.~~

56. (currently amended) The method of claim 55, wherein said artifact comprises an extraneous portion of an optical field of view ~~at least one morphological feature is selected from the group consisting of size, shape, and border sharpness.~~

57. – 58. (canceled)

59. (currently amended) The method of claim 54, wherein said area of said sample comprises human cervical tissue; and said characteristic ~~of said area of human cervical tissue comprises~~ is abnormal health.

60. (previously presented) An article of manufacture having computer-readable program means with computer-readable instructions embodied thereon for performing the method of claim 33.

61. (new) The method of claim 48, wherein said optical signal is produced at least in part by an endogenous chromophore.

62. (new) The method of claim 61, wherein said endogenous chromophore comprises a molecule selected from the group consisting of NADH, collagen, elastin, flavin, hemoglobin, and porphyrin.

63. (new) The method of claim 33, wherein said spectral data are obtained at substantially the same time said images are obtained.

64. (new) The method of claim 33, further comprising the step of correcting said location according to said aligned images.

65. (new) The method of claim 33, wherein said spectral data comprises both fluorescence data and reflectance data.

66. (new) The method of claim 33, wherein said sample is *in vivo* tissue.

67. (new) The method of claim 33, further comprising the step of determining an area of said sample for biopsy.

68. (new) The method of claim 54, wherein said area of said sample comprises human cervical tissue and said characteristic comprises cervical intraepithelial neoplasia.

69. (new) The method of claim 54, wherein said area of said sample comprises human cervical tissue and said characteristic comprises CIN II/III.

70. (new) The method of claim 54, wherein said determining step comprises accounting for glare.

71. (new) A system for performing spectral analysis of a tissue sample, said method comprising:
a light source configured to illuminate said tissue;
a detector configured to obtain spectral data from said sample as a function of location;
a camera configured to obtain a plurality of sequential images of said tissue sample; and

a processor configured to align a subset of said plurality of images to compensate for sample motion.